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Data Summary for the Pre Survey Interim Status Closure of the Area 514 Facility

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Data Summary for the Pre Survey Interim Status Closure of the Area 514 Facility

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Data Summary for the Pre Survey Interim Status Closure of the Area 514 Facility

I. Introduction

I.1 Purpose

The purpose of this document is to summarize the data obtained from the sampling and analysis of selected locations in the Area 514 Facility.

I.2 Objective

The objective of this document is to evaluate the data in a manner that will provide guidance for the final closure document. This guidance will assist in designing a sampling and analysis plan that will be efficient, cost effective and meet the criteria for acceptance by a independent state certified engineer for completion of the closure activity.

II. Scope of Work for Survey

The overall scope of work was limited to the Area 514 Facility, excluding the B-513 building, the newly installed Quad tanks and the treatment tanks that are currently in use.

III. Sample Acquisition Descriptions

Following are acquisition descriptions of each sample location shown in Figure 1.

(S) Swipe Sample - Using a Whatman, grade 50 filter paper over one 400 sq/cm square, broken into four 100 sq/cm quadrants. Each quadrant represents one sample test (example: Total Threshold Limit Concentration Metals (TTLC), TTLC Hg, Gross Alpha/Beta, and Tritium).

(B) Bulk Sample - Chipped or scraped sample media over a given sample location to meet the minimum weight requirement per analysis (usually about 50-100 grams).

② denotes the collection of two separate bulk layered samples.

Site #1 {514-1}(S/B)- Sump area located approx. 20 feet west of and inside the north vehicle gate. A bulk sample (COC # 6477 item 1) of iron oxide (rust) was scraped using a putty knife on the inside of a carbon steel pipe measuring 7" in diameter. A swipe sample (COC# 6476 item 1) was taken inside the pipe below the area that was scraped.

Site #2 {514-2} (S/B)- Sump area located approx. 19.5 feet west of and inside the north vehicle gate. A swipe sample (COC# 6476 item 2) was taken using the 400sq/cm

template. A bulk sample (COC# 6477 item 2) of cured epoxy paint measuring approx. three inches in diameter was taken over the area that was swiped.

Site #3 {514-3 / 3A} (S/BⓈ)- 3" Gate Valve located approx. 12 feet north of the south vehicle gate. The dirt was collected as a composite bulk sample (COC# 6477 item 3). A swipe sample (COC# 6476 item 3) was taken over the same area as the dirt using the 400 sq/cm template. A bulk sample (COC# 6477 item 4) measuring approx. three inches square was taken of the asphalt.

Site #4 {514-4} (S/B) - Open asphalt area located approx. 25 feet of south vehicle gate and in center of yard. A swipe sample (COC# 6476 item 4) was taken using the 400sq/cm template. A bulk sample (COC# 6477 item 5) of asphalt measuring approx. three inches square was taken over the area that was swiped.

Site #5 {514-5} (S/B) - Center cell of area 514-2 Container Storage Unit in the left lower area of the berm. A swipe sample (COC# 6476 item 5) was taken using the 400sq/cm template. A bulk sample (COC# 6477 item 6) of cured resin coating measuring approx. three inches in diameter was taken over the area that was swiped. A yellow colored resin was noted in this sample and identified as a flagging material used in the application of the resin coating.

Site #6 {514-6 / 6A} (BⓈ)- Three inch culvert drain located adjacent to the reagent storage building (south). The dirt was collected as a composite bulk sample (COC# 6477 item 7). A bulk sample (COC# 6477 item 8) measuring approx. three inches square was taken of the asphalt.

Site #7 {514-7} (S/B) - 514-3 Container Storage Unit in the left sump of the berm. No detectable activity above background was noted. A swipe sample (COC# 6476 item 6) was taken using the 400sq/cm template. A bulk sample (COC# 6477 item 9) of cured resin coating measuring approx. three inches in diameter was taken over the area that was swiped. A yellow colored resin was noted in this sample and identified as a flagging material used in the application of the resin coating.

Site #8 {514-8} (S/B) - Dorr Oliver Room adjacent to the Area 514 Waste Water Filtration Unit and Sump. The sample location was on the wall approx. three feet from the floor. A swipe sample (COC# 6476 item 7) was taken using the 400sq/cm template. A bulk sample (COC# 6477 item 10) of cured resin coating measuring approx. three inches in diameter was taken over the area that was swiped.

Site #9 {514-9} (S/B) - Dorr Oliver Room adjacent to the Area 514 Waste Water Filtration Unit and Sump. The sample location was on the floor. A swipe sample (COC# 6476 item 8) was taken using the 400sq/cm template. A bulk sample (COC# 6478 item 1) of cured resin coating measuring approx. three inches in diameter was taken over the area that was swiped.

Site #10 {514-2} (S) - Roof area for the B-514-2 Container Storage. A swipe sample (COC# 6531 item 1) was taken using the 400sq/cm template.

Site #11 {514-TF} (S) - Roof area for the B-514-TF Tank Farm. A swipe sample (COC# 6531 item 2) was taken using the 400sq/cm template.

Site #12 {514-A} (S) - Roof area for the B-514-3 Container Storage. A swipe sample (COC# 6531 item 3) was taken using the 400sq/cm template.

Site #13 {514-Office} (B) - Roof area for the B-514-Office. A bulk sample (COC# 6531 item 4 & 5) was taken using the 400sq/cm template.

NOTE: A Swipe BLANK was submitted to establish background (COC# 6476 item 9).

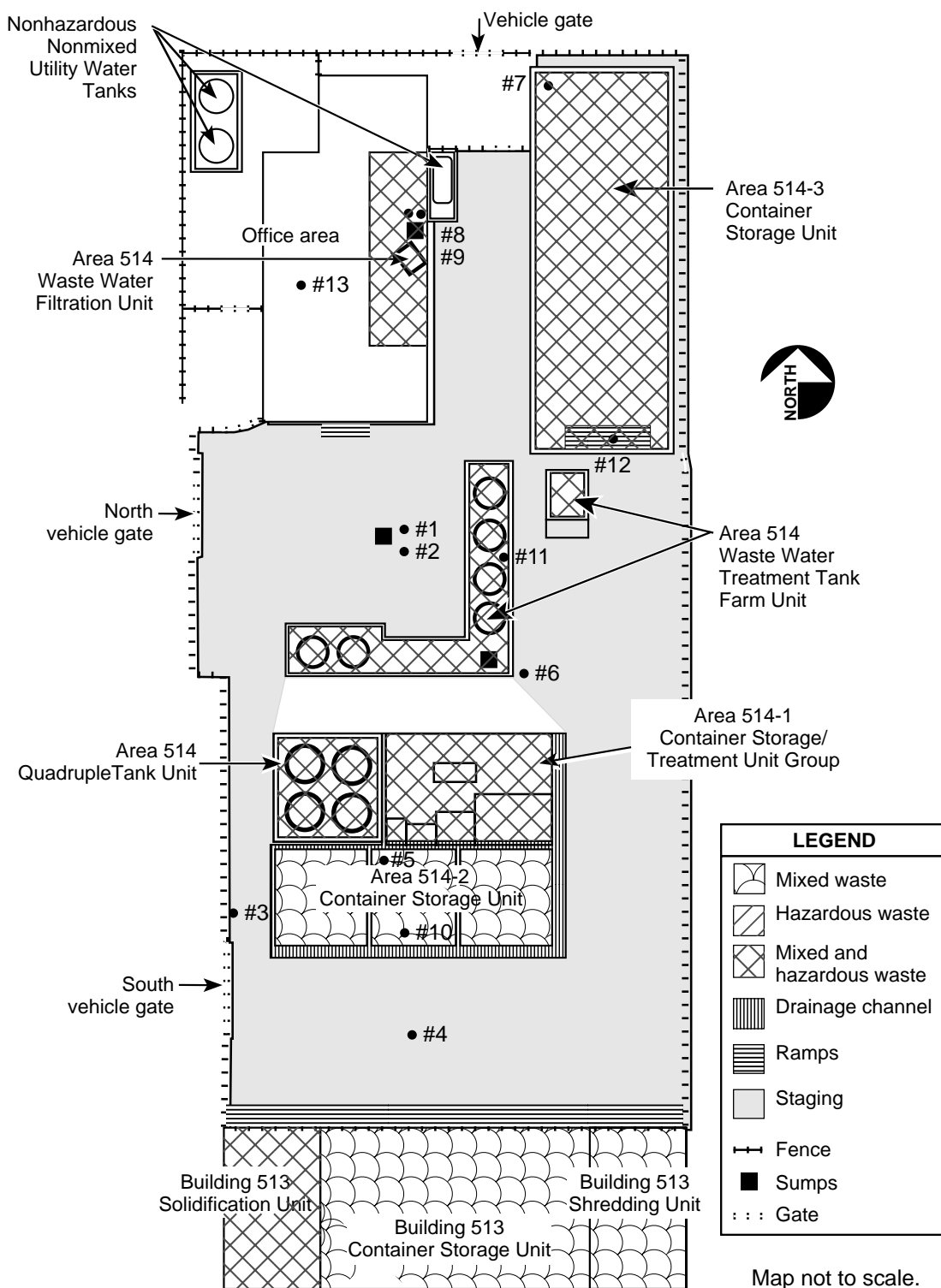


Figure 1: Sampling Locations

IV. Sample Acquisition Location Discussion

Following is a discussion on each sample location for each sample location shown in Figure 1.

Site #1 {514-1}(S/B) - Sump area located approx. 20 feet west, inside the north vehicle gate. No activity above background was noted during the sampling of this location. Total metals and radioactivity were significantly higher than other locations. This was expected since this is an old drain trap with the possibility of accumulation higher than other areas in the facility.

Site #2 {514-2} (S/B) - Sump area located approx. 19.5 feet west, inside the north vehicle gate. No activity above background was noted during the sampling of this location. Contamination levels were not significant.

Site #3 {514-3 / 3A} (S/B②) - 3" Gate Valve located approx. 12 feet north of the south vehicle gate. During the surveying of this sample location approx. 1000 CPM was detected using an E-120 w/HP-210 pancake probe. The activity was isolated to an area of built up dirt located in and around the inlet of the drain. Analytical results show that the dirt sample had no significant levels of contamination. After sample was removed, a survey by Hazards Control did not detect any activity and the area was released. The dirt sample activity matched that of natural activity in soils.

Site #4 {514-4} (S/B) - Open asphalt area located approx. 25 feet of south vehicle gate and centered. No activity above background was noted during the sampling of this location. Contamination levels were not significant.

Site #5 {514-5} (S/B) - Center cell of area 514-2 Container Storage Unit in the left lower area of the berm. No activity above background was noted during the sampling of this location. Contamination levels were not significant.

Site #6 {514-6 / 6A} (B②) - 3" culvert drain located adjacent to the reagent storage building (south). No activity above background was noted during the sampling of this location. Contamination levels were not significant.

Site #7 {514-7} (S/B) - 514-3 Container Storage Unit in the left sump of the berm. Due to the storage of Transuranic (TRU) and MBA near the sample location, an accurate survey of the sample area could not be completed. However, after the removal of the bulk sample, a survey of the bulk media was conducted in a low background area. No detectable activity above background was noted. Contamination levels were not significant.

Site #8 {514-8} (S/B) - DO Room adjacent to the Area 514 Waste Water Filtration Unit and Sump. No activity above background was noted during the sampling of this location. Contamination levels were not significant.

Site #9 {514-9} (S/B) - DO Room adjacent to the Area 514 Waste Water Filtration Unit and Sump. No activity above background was noted during the sampling of this location. Contamination levels were not significant.

Site #10 {514-2} (S) - Roof area for the B-514-2 Container Storage. No activity above background was noted during the sampling of this location. A swipe sample (COC# 6531 item 1) was taken using the 400sq/cm template.

Site #11 {514-TF} (S) - Roof area for the B-514-TF Tank Farm. No activity above background was noted during the sampling of this location. Contamination levels were not significant.

Site #12 {514-A} (S) - Roof area for the B-514-3 Container Storage. No activity above background was noted during the sampling of this location. Contamination levels were not significant.

Site #13 {514-Office} (B) - Combined with #12 as a composite. Roof area for the B-514-Office. No activity above background was noted during the sampling of this location. Contamination levels were not significant.

V. Comments

In general, contamination levels were consistently low throughout the facility. Even the TTLC values, though elevated in some locations, were at a level that can be assumed would pass a TCLP or an STLC analysis. Radioactivity levels were also low in the low pCi/g levels and other than the iron pipe sample, 514-1 can be considered primordial or at background.

Based on the data obtained in the pre-survey the final closure activity can probably be accomplished with minimal decontamination effort and a small number of samples for verification.

Treatment tanks, equipment and ancillary parts will be sampled for release after cessation of treatment activities. Structural areas will be verified after removal of equipment. Final verification will include metals, radioactivity, solvents, and PCBs. Solvents and PCBs are not expected to be present, since treatment volumes have low specified solvent concentration limitations for all treatments. All other sampling activities will be done using methodology similar to that in the Presurvey Plan.

ANALYTICAL DATA

METALS TTLC																				
SWIPES (ug)																				
LOCATION	DESCRIPTION	SAMPLE #	Ag	As	Ba	Be	Cd	Co	Cr	Cu	Hg	Mn	Mo	Ni	Pb	Sb	Se	Tl	V	Zn
514-1	Iron Pipe	45028	5	<5	40	<0.1	<0.2	<0.5	20	40	2	22	1	9	39	<2	<2	<4	<0.5	65
514-2	Berm	45029	<1	<5	4	<0.1	<0.2	<0.5	5	10	<0.4	15	<0.5	5	2	<2	<2	<4	<0.5	20
514-3	Asphalt	45030	<1	<5	4	<0.1	<0.2	<0.5	1	7	0.5	8	<0.5	1	2	<2	<2	<4	<0.5	77
514-4	Asphalt	45031	<1	<5	1	<0.1	<0.2	<0.5	<0.5	1	<0.4	2	<0.5	<1	<2	<2	<2	<4	<0.5	21
514-5	Berm	45032	<1	<5	2	<0.1	<0.2	1	2	10	<0.4	3	<0.5	<1	<2	<2	2	<4	<0.5	66
514-7	Asphalt	45033	<1	<5	7	<0.1	<0.2	<0.5	2	5	<0.4	12	<0.5	2	2	<2	<2	<4	<0.5	35
514-8	Wall	45034	<1	<5	1	<0.1	<0.2	<0.5	<0.5	1	1	<0.2	<0.5	<1	<2	<2	<2	<4	<0.5	10
514-9	Floor	45035	<1	<5	<0.2	<0.1	<0.2	<0.5	<0.5	<1	<0.4	<0.2	<0.5	<1	<2	<2	<2	<4	<0.5	13
514-10	Roof-2	45308	<1	<10	6	<0.1	<0.5	<0.5	1	4	<0.4	8	<0.8	<2	2	<5	<5	<10	<2	380
514-11	Roof-TF	45309	<1	<10	5	<0.1	<0.5	<0.5	7	2	<0.4	6	<0.8	<2	2	<5	<5	<10	<2	12
514-12	Roof-A	45310	<1	<10	5	<0.1	<0.5	<0.5	1	2	<0.4	6	<0.8	<2	2	<5	<5	<10	<2	280
Blank	**	45313	<1	<10	<0.2	<0.1	<0.5	<0.5	<0.5	<1	<0.4	<0.2	<0.8	<2	<2	<5	<5	<10	<2	<1
Blank	**	45036	<1	<5	<0.2	<0.1	<0.2	<0.5	<0.5	<1	<0.4	<0.2	<0.5	<1	<2	<2	<2	6	<0.5	2

METALS TTLC																						
BULK (mg/Kg)																						
LOCATION	DESCRIPTION	SAMPLE #	Ag	As	Ba	Be	Cd	Co	Cr	Cu	Hg	Mn	Mo	Ni	Pb	Sb	Se	Tl	V	Zn		
514-1	Iron Oxide	45037	160	<10	4600	27	10	24	880	690	3.3	790	53	490	990	9	<5	<10	32	2900		
514-2	Epoxy Paint	45038	12	<10	2700	0.7	2	7.8	43	42	0.2	330	2	45	20	<5	<5	<10	40	1100		
514-3	Dirt	45039	20	<10	350	0.9	3	12	240	300	2.6	560	10	160	110	7	<5	<10	34	3200		
514-3A	Asphalt	45040	7	<10	140	0.9	0.6	6.9	54	35	0.2	390	3	51	20	<5	<5	<10	37	730		
514-4	Asphalt	45041	<1	<10	100	0.1	<0.5	8.7	40	20	<0.04	410	<0.8	83	10	<5	<5	<10	39	59		
514-5	Resin Coating	45042	<1	<10	14	0.1	<0.5	<0.5	3	7	<0.05	23	2	2	4	<5	<5	<10	<2	33		
514-6	Dirt	45043	57	<10	390	0.8	3	8.1	170	190	0.7	330	5	110	100	7	<5	<10	31	1500		
514-6A	Asphalt	45044	17	<10	200	3.4	1	8.4	98	150	0.4	420	4	90	57	<5	<5	<10	28	760		
514-7	Resin Coating	45045	0.9	<9	4000	<0.05	<0.5	2	12	12	0.1	17	<0.7	5	6	<5	<5	<9	2	5600		
514-8	Epoxy Paint	45046	2	<9	210	<0.05	2	9.2	43	24	1.4	190	0.9	24	68	41	6	<9	67	510		
514-9	Epoxy Paint	45047	<0.9	<9	2200	0.2	<0.5	7.2	52	27	0.4	320	1	37	57	<5	<5	<9	22	460		
514-Office	Gravel/Dirt	45311	2	<4	150	0.8	1	42	70	58	0.2	410	5.3	52	97	4	<2	<3	37	900		

RADIOLOGICAL							
Survey/CPM							
Swipe-dpm/100cm²							
LOCATION	DESCRIPTION	SAMPLE #	Survey Alpha	Survey Beta/Gamma	Swipe Gross Alpha	Swipe Gross Beta	Swipe Tritium
514-1	Iron Oxide	45028	BKG	BKG	0.5	1.1	49
514-2	Epoxy Paint	45029	BKG	BKG	0	0	22
514-3	Dirt	45030	BKG	BKG	0.5	0	38
514-4	Asphalt	45031	BKG	BKG	0.5	0.3	24
514-5	Resin Coating	45032	BKG	BKG	0	1.9	28
514-7	Resin Coating	45033	BKG	BKG	0	1.1	50
514-8	Epoxy Paint	45034	BKG	BKG	0	1.1	18
514-9	Epoxy Paint	45035	BKG	BKG	0	1.9	29
514-2	Roof	45308	BKG	BKG	1.4	4.3	6
514-TF	Roof	45309	BKG	BKG	0.5	0	8
514-A	Roof	45310	BKG	BKG	0.5	0	7
	Blank	45313	BKG	BKG	0	0	7
	Blank	45036	BKG	BKG	0	1.9	21
Regulatory limits for swipes are as follows;							
Gross Alpha-20 dpm/100cm ²							
Gross Beta-200 dpm/100cm ²							
Tritium-1000 dpm/100cm ²							

RADIOLOGICAL					
BULK (pCi/g)					
LOCATION	DESCRIPTIO	SAMPLE #	Gross Alpha	Gross Beta	Tritium
514-1	Iron Oxide	45037	340	370	8.5
514-2	Epoxy Paint	45038	4.2	7.1	<MDC
514-3	Dirt	45039	15	26	<MDC
514-3A	Asphalt	45040	4	4.9	<MDC
514-4	Asphalt	45041	<MDC	2.5	<MDC
514-5	Resin Coating	45042	<MDC	<MDC	<MDC
514-6	Dirt	45043	15	25	<MDC
514-6A	Asphalt	45044	3.5	12	<MDC
514-7	Resin Coating	45045	<MDC	<MDC	<MDC
514-8	Epoxy Paint	45046	<MDC	<MDC	<MDC
514-9	Epoxy Paint	45047	<MDC	<MDC	23

RADIOLOGICAL													
BULK													
Gamma Isotopes (pCi/g)													
LOCATION	DESCRIPTION	SAMPLE #											
			Be-7	K-40	Co-60	Cs-137	Ra-226	Ra-228	Th-228	Am-241	U-235	U-238	Ag-108m
514-1	Iron Oxide	45037	ND	7.7	1.4	6.9	0.58	ND	0.32	4.4	0.45	17	0.21
514-2	Epoxy Paint	45038	ND	ND	0.15	1.8	ND	ND	ND	ND	ND	ND	ND
514-3	Dirt	45039	5.3	9.2	ND	0.15	0.47	0.51	0.46	ND	9	420	ND
514-3A	Asphalt	45040	0.48	5.7	ND	ND	0.38	0.33	0.39	ND	0.09	ND	ND
514-4	Asphalt	45041	ND	6	ND	ND	0.031	0.27	0.34	ND	ND	ND	ND
514-5	Resin Coating	45042	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
514-6	Dirt	45043	10	6.4	ND	0.11	0.3	0.82	0.81	ND	0.32	16	ND
514-6A	Asphalt	45044	1.3	5.8	ND	ND	0.39	0.31	0.44	ND	ND	ND	ND
514-7	Resin Coating	45045	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
514-8	Epoxy Paint	45046	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
514-9	Epoxy Paint	45047	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ADIOLOGICAL													
Swipe													
Gamma Isotopes (pCi/g)													
LOCATION	DESCRIPTION	SAMPLE #											
			Be-7	K-40	C0-60	Cs-137	Ra-226	Ra-228	Th-228	Am-241	U-235	U-238	Ag-108m
514-1	Iron Oxide	45028	ND	7.7	1.4	6.9	0.58	ND	0.32	4.4	0.45	17	0.21
514-2	Epoxy Paint	45029	ND	ND	0.15	1.8	ND	ND	ND	ND	ND	ND	ND
514-3	Dirt	45030	5.3	9.2	ND	0.15	0.47	0.51	0.46	ND	9	420	ND
514-4	Asphalt	45031	0.48	5.7	ND	ND	0.38	0.33	0.39	ND	0.09	ND	ND
514-5	Resin Coating	45032	ND	6	ND	ND	0.031	0.27	0.34	ND	ND	ND	ND
514-7	Resin Coating	45033	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
514-8	Epoxy Paint	45034	10	6.4	ND	0.11	0.3	0.82	0.81	ND	0.32	16	ND
514-9	Epoxy Paint	45035	1.3	5.8	ND	ND	0.39	0.31	0.44	ND	ND	ND	ND
514-2	Roof	45308	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
514-TF	Roof	45309	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
514-A	Roof	45310	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND